CLAIMS:

1.   A stream data recording and playback apparatus comprising:

interface means for transmitting and receiving stream data and data for control;

a built-in or removable recording medium for recording received data;

encrypting means for performing a scramble process of data to be transmitted; and

decrypting means for performing a de-scramble process of the received data,

whereby key information for the scramble process or de-scramble process is interchanged by performing, through said interface means, an authentication process between the present apparatus and another apparatus for transmission or reception of stream data, data obtained by controlling the de-scramble process in accordance with copy control information added to the received stream data and information based on the copy control information are recorded on said recording medium, and stream data obtained by controlling the scramble process by said encrypting means in accordance with the information based on the copy control information read out of said recording medium and the copy control information are transmitted through said interface means,

wherein when the data de-scrambled by said decrypting means and thereafter recorded on said

recording medium is read, scrambled by said encrypting means and transmitted as stream data from said interface means, the copy control information added to said stream data to be transmitted is changed depending on whether said data remains to be kept on said recording medium even after said data is read out or said data is deleted from said recording medium after said data is read out.

2.   A stream data recording and playback apparatus according to claim 1,

        wherein when said data is deleted after read out of said recording medium, said data is added with the same copy control information as that added when said data is recorded and is then transmitted as stream data from said interface means and when said data remains to be kept, stream data transmitted from said interface means is added with copy control information indicating that said stream data is prohibited from being recorded and is then transmitted.

3.   A stream data recording and playback apparatus comprising:

        interface means for transmitting and receiving stream data and data for control;

        a built-in or removable recording medium for recording received data;

        encrypting means for performing a scramble process of data to be transmitted; and

        decrypting means for performing a de-scramble

process of the received data,

whereby a channel is established which is adapted to transmit the stream data onto a bus signal line connected to said interface means to permit data to be interchanged between the present apparatus and another apparatus, key data is interchanged which is necessary for carrying out authentication between the present apparatus and the transmission destination apparatus so as to cause said encrypting means to perform a scramble process of data to be transmitted on said channel or so as to cause said decrypting means to de-scramble the data, data obtained by controlling the de-scramble process in accordance with copy control information added to the received stream data and information based on the copy control information are recorded on said recording medium, and stream data obtained by controlling the scramble process by said encrypting means in accordance with information based on the copy control information read out of said recording medium and the copy control information are transmitted through said interface means,

wherein the data recorded on said recording medium is subjected to the scramble process by using said key data by means of said encrypting means and thereafter transmitted as stream data from said interface means through said channel, said data is deleted from said recording medium after read out, and authentication between the present apparatus and an

apparatus other than the transmission destination apparatus is rejected during the transmission of said stream data.

4.   A stream data recording and playback apparatus comprising:

        interface means for transmitting and receiving stream data and data for control;

        a built-in or removable recording medium for recording received data; and

        encrypting means for performing a scramble process of data to be transmitted and decrypting means for performing a de-scramble process of the received data,

        whereby a channel is established which is adapted to transmit stream data onto a bus signal line connected to said interface means to permit data to be interchanged between the present apparatus and another apparatus, key data is interchanged which is necessary for carrying out authentication between the present apparatus and the transmission destination apparatus so as to perform a scramble process of data to be transmitted on said channel or so as to de-scramble the data, data obtained by controlling the de-scramble process in accordance with copy control information added to stream data received by said interface means and information based on copy control information are recorded on said recording medium, stream data obtained by controlling the scramble process by information

based on the copy control information read out of said recording medium and said copy control information are transmitted through said interface means,

wherein when the data read out of said recording medium is to be deleted after read out, a second channel other than the channel that has already been established is established, key data is interchanged which is necessary for carrying out authentication between the present apparatus and the transmission destination apparatus so as to perform a scramble process of data to be transmitted on said second channel or so as to de-scramble the data, the data recorded on said recording medium is subjected to the scramble process by using said key data and thereafter transmitted as stream data from said interface means through said second channel while being added with the same copy control information as that used when said data is recorded, and authentication tried by another apparatus to possess in common the key data used for said second channel is rejected during the stream data transmission on said second channel.

5.   A stream data recording and playback apparatus according to claim 4,

wherein when said second channel is established, the channel that has already been established for transmission of the stream data is broken and stream transmission by only the second channel is carried out.

6.   A stream data recording and playback apparatus according to claim 4,

wherein when said second channel is established, an empty packet is transmitted to the channel that has already been established for transmission of the stream data and stream transmission by only the second channel is carried out.

7.   A stream data recording and playback apparatus according to claim 4,

wherein two channels of said second channel and said already established first channel are used to transmit stream data to be transmitted from said second channel by adding it with the same copy control information as that used when said data is recorded and to transmit stream data to be transmitted from said first channel by adding it with copy control information indicating that said stream data is prohibited from being recorded.

8.   A stream data recording and playback apparatus according to claim 4,

wherein stream data is transmitted from said second channel to a recording apparatus for recording stream data and stream data is transmitted from said already established channel to a display apparatus for playing back and displaying stream data.

9.   A stream data recording and playback apparatus according to claim 3,

wherein when the data recorded on said

recording medium is read and deleted, a command for
inquiring the transmission destination apparatus about
its operation status is transmitted repetitively, so
that when it is confirmed by a response to said command
that the transmission destination apparatus records the
received stream, the data transmitted till then is
deleted from said recording medium and when it is
detected that said transmission destination apparatus
interrupts the recording operation or when the
transmission of the stream data fails to proceed,
reading of the data is stopped and the data remaining
on said recording medium at that moment is held as it
is.

10.   A stream data recording and playback
apparatus according to claim 3,

         wherein a channel for transmitting said
stream data is established, authentication is carried
out between the present apparatus and said transmission
destination apparatus, a search for starting position
of the data to be transmitted to said transmission
destination apparatus is carried out, a command for
commanding said transmission destination apparatus to
start recording is transmitted and a stream applied
with a scramble process beginning with a head portion
of said data subject to the search of starting position
is transmitted to said channel.

11.   A stream data recording and playback
apparatus according to claim 10,

wherein a command for commanding said
transmission destination apparatus to pause recording
after reading of data being transmitted to said
transmission destination apparatus ends is transmitted
to said transmission destination apparatus, a search
for starting position of data to be transmitted next to
said transmission destination apparatus is carried out,
a command for commanding said other transmission
destination apparatus to start recording is transmitted
to said other transmission destination apparatus, and a
stream applied with a scramble process beginning with a
head portion of said data subject to the search for
starting position is transmitted to said channel.

12.   A stream data recording and playback
apparatus according to claim 3 further comprising:

display means for displaying operation
methods,

wherein a channel for transmitting said
stream data is established, authentication is carried
out between the present apparatus and said transmission
destination apparatus, a search for starting position
of data to be transmitted to said transmission
destination apparatus is carried out, a message for
causing said transmission destination apparatus to
start recording is displayed by means of said display
means, a stream applied with a scramble process
beginning with a head portion of said data subject to
the search for starting position is transmitted to said

channel by an operation from the user.

13.   A stream data recording and playback apparatus having interface means for transmitting and receiving stream data and copy control information data, whereby key information for a scramble process or a de-scramble process is interchanged by performing an authentication process between the present apparatus and another apparatus for transmission or reception of stream data and the stream data is recorded on or played back from a built-in or removable recording medium,

        wherein when received data is recorded on the recording medium after decrypted and de-scrambled and the recorded data is read out, encrypted and scrambled so as to be transmitted as stream data from said interface means, copy control information added to said stream data to be transmitted is changed depending whether said data remains to be kept on said recording medium even after read out or said data is deleted from said recording medium after read out.

14.   A stream data recording and playback apparatus according to claim 1,

        wherein said built-in recording medium is a hard disc drive.

15.   A stream data recording and playback apparatus according to claim 1,

        wherein said removable recording medium is a record erasable optical disc.

16.   A method of transferring stream data used in a stream data recording and playback apparatus having interface means for establishing a channel for data transmission between the present apparatus and another apparatus to transmit/receive stream data and data for control, a built-in or removable recording medium for recording received data, encrypting means for performing a scramble process of data to be transmitted and decrypting means for performing de-scramble process of received data, whereby key information for the scramble process or de-scramble process is interchanged by performing an authentication process between the present apparatus and the different apparatus for transmission and reception of stream data, data obtained by controlling the de-scramble process in accordance with copy control information added to the received stream data and information based on the copy control information are recorded on said recording medium and stream data obtained by controlling the scramble process in accordance with information based on the copy control information read out of said recording medium and the copy control information are transmitted through said interface means, said stream data transfer method comprising the steps of:

creating key data for performing a scramble process of data read out of said recording medium and establishing a channel for data transmission necessary to transmit stream data from said interface means;

performing authentication between the present apparatus and a stream data transmission destination apparatus to cause said apparatuses to possess said key data in common, scramble-processing data read out of said recording medium by using said key data by means of said encrypting means and transmitting the scrambled data as stream data from said interface means onto said data transmission channel while adding copy control information to that data; and

rejecting common possession of said key data based on a request for authentication made by an apparatus other than said transmission destination apparatus during transmission of the stream data carried out by using said transmission channel and after the transmission of the stream data ends, deleting from said recording medium the data read out of said recording medium and transmitted and braking said transmission channel and said key data.

17. A stream data transfer method according to claim 16 further comprising the steps of:

transmitting repetitively to said transmission destination apparatus a command for inquiring about its operation status during transmission of said stream data;

when it is confirmed from a response to said command that said transmission destination apparatus records the received stream, deleting data transmitted till then from said recording medium; and

when it is detected that said transmission
destination apparatus pauses recording operation or the
transmission of the stream data fails to proceed,
stopping reading of the data and holding data remaining
on said recording medium at that moment as it is.

18.   A stream data transfer method according to
claim 16,

wherein after the channel for transmission of
stream data to the transmission destination apparatus
is established and authentication between the present
apparatus and said transmission destination apparatus
is carried out, a command for starting recording
operation is transmitted to said transmission
destination apparatus in synchronism with start of the
transmission beginning with a head portion of data to
be transmitted to said transmission destination
apparatus so as to cause said transmission destination
apparatus to record said data beginning with its head
portion.

19.   A stream data transfer method according to
claim 16,

wherein after the channel for transmission of
stream data to the transmission destination apparatus
is established and authentication is carried out
between the present apparatus and said transmission
destination apparatus, an indication for causing said
destination apparatus to perform recording operation is
given to the user, and the data to be transmitted to

said transmission destination apparatus is made ready
to start beginning with its head portion in response to
the user operation and thereafter said transmission
destination apparatus is caused to record said data
beginning with its head portion.